

WHAT IS CLAIMED IS:

1. An electronic circuit device comprising:

a plurality of electronic circuit substrates over which either of an optical shutter or an optical sensor is disposed, or both of them are disposed,

wherein said plurality of electronic circuit substrates comprise transparent substrates,

an optical signal is inputted from an external, said optical signal which has been inputted is inputted into an optical shutter or an optical sensor over a transparent substrate which is different from said transparent substrates after said optical signal has been transmitted through at least one or more of said transparent substrates,

said optical shutter controls transmission and non-transmission of said optical signal, and

said optical sensor converts said optical signal into an electric signal by an electronic circuit provided over a same transparent substrate as said optical sensor.

2. A device according to claim 1, wherein said electronic circuit comprises a thin film transistor.

3. A device according to claim 1, wherein said electronic circuit comprises a thin film transistor and a single crystal IC (Integrated Circuit) chip.

4. A device according to claim 1, wherein said optical sensor

is an amorphous silicon photodiode, or an amorphous silicon phototransistor.

5. A device according to claim 1, wherein said optical sensor is a polysilicon (p-Si) photodiode, or a polysilicon phototransistor.

6. A device according to claim 1, wherein said optical sensor is a single crystal silicon photodiode, or a single crystal silicon phototransistor.

7. A device according to claim 1, wherein said optical shutter comprises a liquid crystal which is sandwiched between two sheets of transparent substrates.

8. A device according to claim 7, wherein a deflection plate is disposed on said transparent substrate, and said deflection plate is disposed only nearby said optical shutter.

9. An electronic circuit device comprising:

a plurality of transparent substrates over which either of an optical shutter or an optical sensor is disposed, or both of them are disposed,

wherein said plurality of transparent substrates have been laminated,

an optical signal is inputted from an external, said optical signal which has been inputted is inputted into an

optical shutter or an optical sensor over a transparent substrate which is different from said transparent substrates after said optical signal has been transmitted through at least one or more of said transparent substrates,

said optical shutter controls transmission and non-transmission of light, and

said optical sensor converts said optical signal into an electric signal by an electronic circuit provided over a same transparent substrate as said optical sensor.

10. A device according to claim 9, wherein said electronic circuit comprises a thin film transistor.

11. A device according to claim 9, wherein said electronic circuit comprises a thin film transistor and a single crystal IC (Integrated Circuit) chip.

12. A device according to claim 9, wherein said optical sensor is an amorphous silicon photodiode, or an amorphous silicon phototransistor.

13. A device according to claim 9, wherein said optical sensor is a polysilicon (p-Si) photodiode, or a polysilicon phototransistor.

14. A device according to claim 9, wherein said optical sensor is a single crystal silicon photodiode, or a single crystal

silicon phototransistor.

15. A device according to claim 9, wherein said optical shutter comprises a liquid crystal which is sandwiched between two sheets of transparent substrates.

16. A device according to claim 15, wherein a deflection plate is disposed on said transparent substrate, and said deflection plate is disposed only nearby said optical shutter.

17. An electronic circuit device comprising a plurality of transparent substrates over which either of an optical shutter or an optical sensor is disposed, or both of them are disposed, wherein an optical signal is directly inputted into said optical shutter from an external or said optical signal is inputted into said optical shutter after said optical signal has been transmitted through said transparent substrate, in a case where said optical shutter has transmitted said optical signal, the transmitted optical signal is directly inputted into said optical sensor or inputted into said optical sensor after said optical signal has been transmitted through a transparent substrate which is different from said transparent substrates.

18. A device according to claim 17, wherein said electronic circuit comprises a thin film transistor.

19. A device according to claim 17, wherein said electronic circuit comprises a thin film transistor and a single crystal IC (Integrated Circuit) chip.

20. A device according to claim 17, wherein said optical sensor is an amorphous silicon photodiode, or an amorphous silicon phototransistor.

21. A device according to claim 17, wherein said optical sensor is a polysilicon (p-Si) photodiode, or a polysilicon phototransistor.

22. A device according to claim 17, wherein said optical sensor is a single crystal silicon photodiode, or a single crystal silicon phototransistor.

23. A device according to claim 17, wherein said optical shutter comprises a liquid crystal which is sandwiched between two sheets of transparent substrates.

24. A device according to claim 23, wherein a deflection plate is disposed on said transparent substrate, and said deflection plate is disposed only nearby said optical shutter.

25. An electronic circuit device comprising:

a plurality of transparent substrates over which either of an optical shutter or an optical sensor is disposed, or both

of them are disposed,

wherein said optical shutter is controlled by an electronic circuit over a transparent substrate,

an optical signal inputted from an external is inputted into said optical shutter, and whether said optical signal has been transmitted or not is decided, thereby taking out an output signal of said electronic circuit.

26. A device according to claim 25, wherein said electronic circuit comprises a thin film transistor.

27. A device according to claim 25, wherein said electronic circuit comprises a thin film transistor and a single crystal IC (Integrated Circuit) chip.

28. A device according to claim 25, wherein said optical sensor is an amorphous silicon photodiode, or an amorphous silicon phototransistor.

29. A device according to claim 25, wherein said optical sensor is a polysilicon (p-Si) photodiode, or a polysilicon phototransistor.

30. A device according to claim 25, wherein said optical sensor is a single crystal silicon photodiode, or a single crystal silicon phototransistor.

31. A device according to claim 25, wherein said optical shutter comprises a liquid crystal which is sandwiched between two sheets of transparent substrates.

32. A device according to claim 31, wherein a deflection plate is disposed on said transparent substrate, and said deflection plate is disposed only nearby said optical shutter.

33. An electronic circuit device comprising:

a plurality of transparent substrates over which either of an optical shutter or an optical sensor is disposed, or both of them are disposed,

wherein said transparent substrates have been laminated,

said optical shutter is controlled by an electronic circuit provided over said transparent substrate,

an optical signal inputted from an external is inputted into said optical shutter, and whether said optical signal has been transmitted or not is decided, thereby taking out an output signal of said electronic circuit.

34. A device according to claim 33, wherein said electronic circuit comprises a thin film transistor.

35. A device according to claim 33, wherein said electronic circuit comprises a thin film transistor and a single crystal IC (Integrated Circuit) chip.

36. A device according to claim 33, wherein said optical sensor is an amorphous silicon photodiode, or an amorphous silicon phototransistor.

37. A device according to claim 33, wherein said optical sensor is a polysilicon (p-Si) photodiode, or a polysilicon phototransistor.

38. A device according to claim 33, wherein said optical sensor is a single crystal silicon photodiode, or a single crystal silicon phototransistor.

39. A device according to claim 33, wherein said optical shutter comprises a liquid crystal which is sandwiched between two sheets of transparent substrates.

40. A device according to claim 39, wherein a deflection plate is disposed on said transparent substrate, and said deflection plate is disposed only nearby said optical shutter.

41. A computer comprising:

a plurality of arithmetic units comprising a thin film transistors over a plurality of transparent substrates, and a plurality of storage devices,

wherein exchanges of electronic information between said substrates are performed by an optical shutter and an optical sensor which are controlled by thin film transistors.



42. A computer comprising:

a plurality of arithmetic units comprising thin film transistors over a plurality of transparent substrates, and a plurality of storage devices,

wherein exchanges of electronic information between said substrates are performed in parallel by an optical shutter and an optical sensor which are controlled by thin film transistors.